



WRE Project Status

October 20, 2005

Vashon-Maury Island Water Resources Evaluation

October 20, 2005



Presentation Outline

- Project Review
- Water Quality Monitoring
- Water Quantity Monitoring
- Modeling
- Monitoring Well Installation
- Web Page Update

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Project Review

- Ongoing (2004-2010) project
- Island-wide water resources characterization
- Develop modeling tool to assess possible future scenarios
- Multiple phases
- Cooperation/coordination between county, state, island residents
- Funded by VMI Rural Drainage Program (RDP) fees

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Groundwater Quality Monitoring

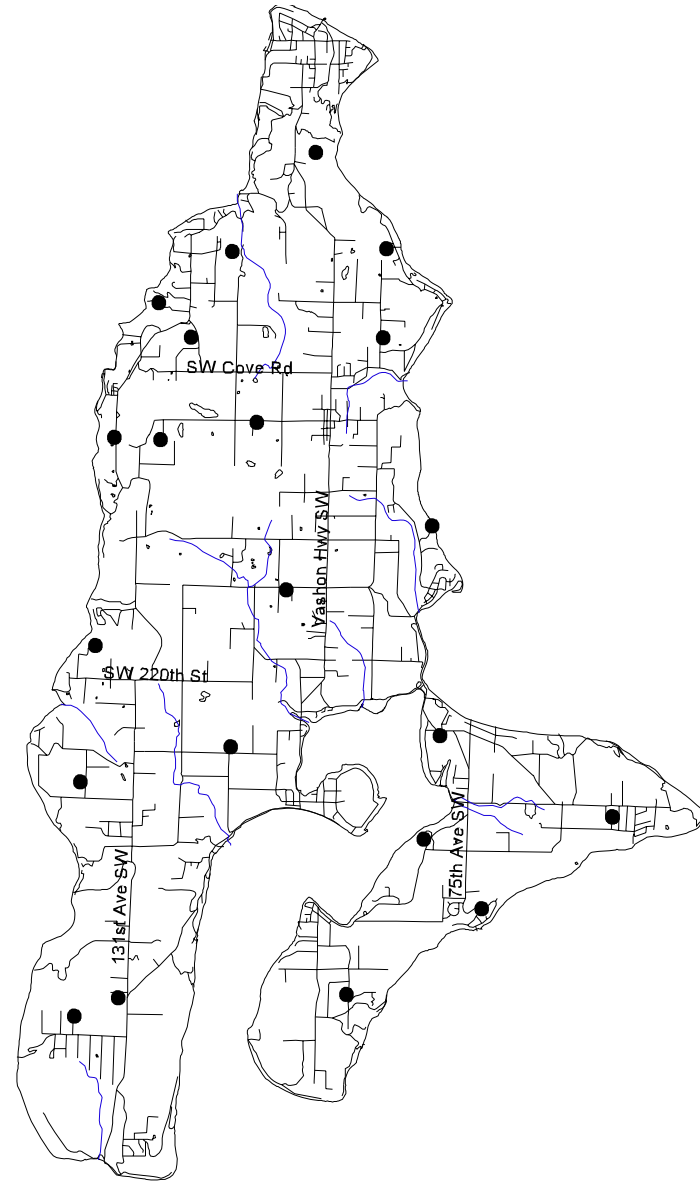
- Annual monitoring completed June 20-23
- Environmental indicators
 - 20 sites
 - Nitrate, chloride, arsenic
 - Results will be present in annual data report
- Organic chemicals
 - 14 of 20 sites
 - Cl-pest, OP-pest, Cl-herbs, EDC
 - No detected organics except bis(2-ethylhexyl)adipate [lab contamination]

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Water Quality Sites

21 locations



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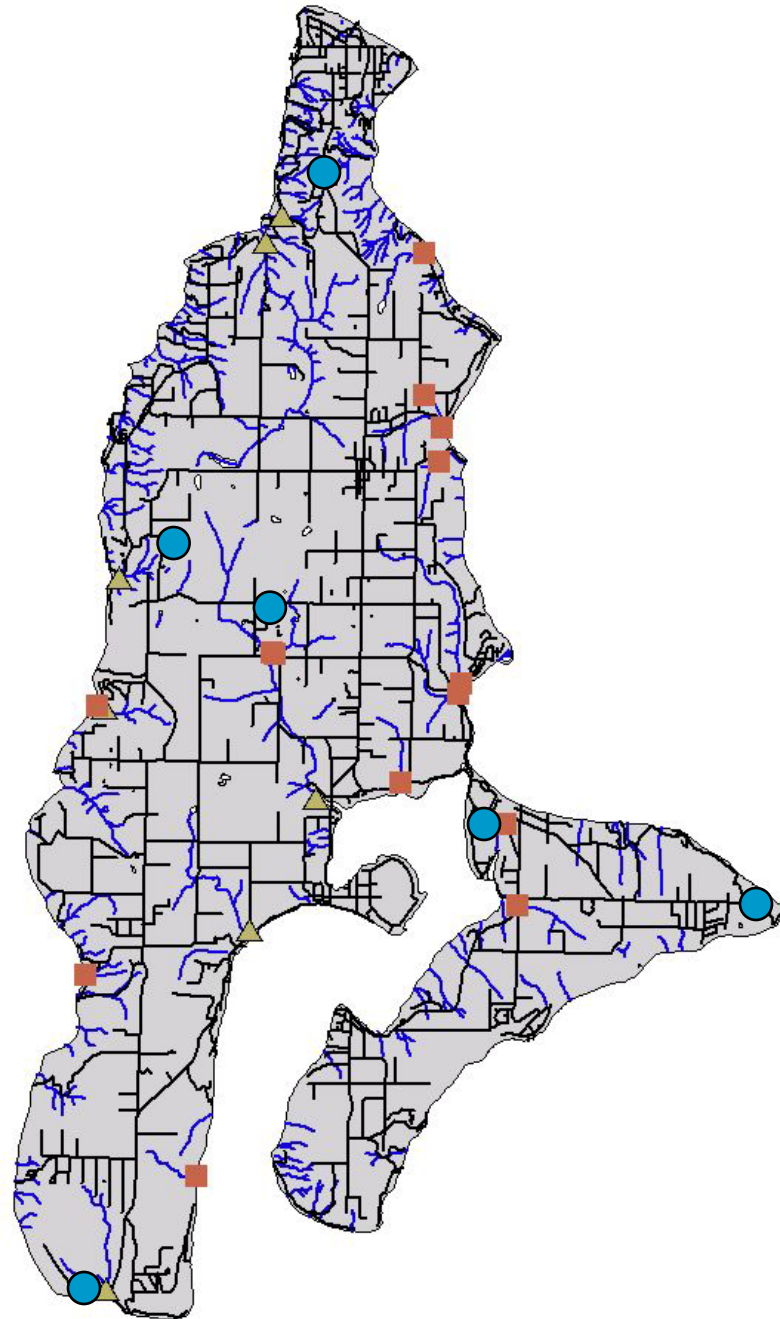
Water Quantity Monitoring

- Island-wide groundwater level survey
 - First round completed September
 - 24 sites
- Island-wide streamflow survey
 - done in Sept to coincide with WL survey
 - 21 sites
- Stream gaging continuing at 6 sites
- Precipitation gaging continuing at 6 sites
 - Plan to upgrading one site to be a "full" meteorological station
 - precipitation, air temperature, wind speed, wind direction, solar radiation, and % cloud cover
- All monitoring data to be presented in annual data report


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Stream and Precipitation Stations

Circles = Precipitation gauges
Squares = Baseflow measurements
Triangles = Stream Gauge sites



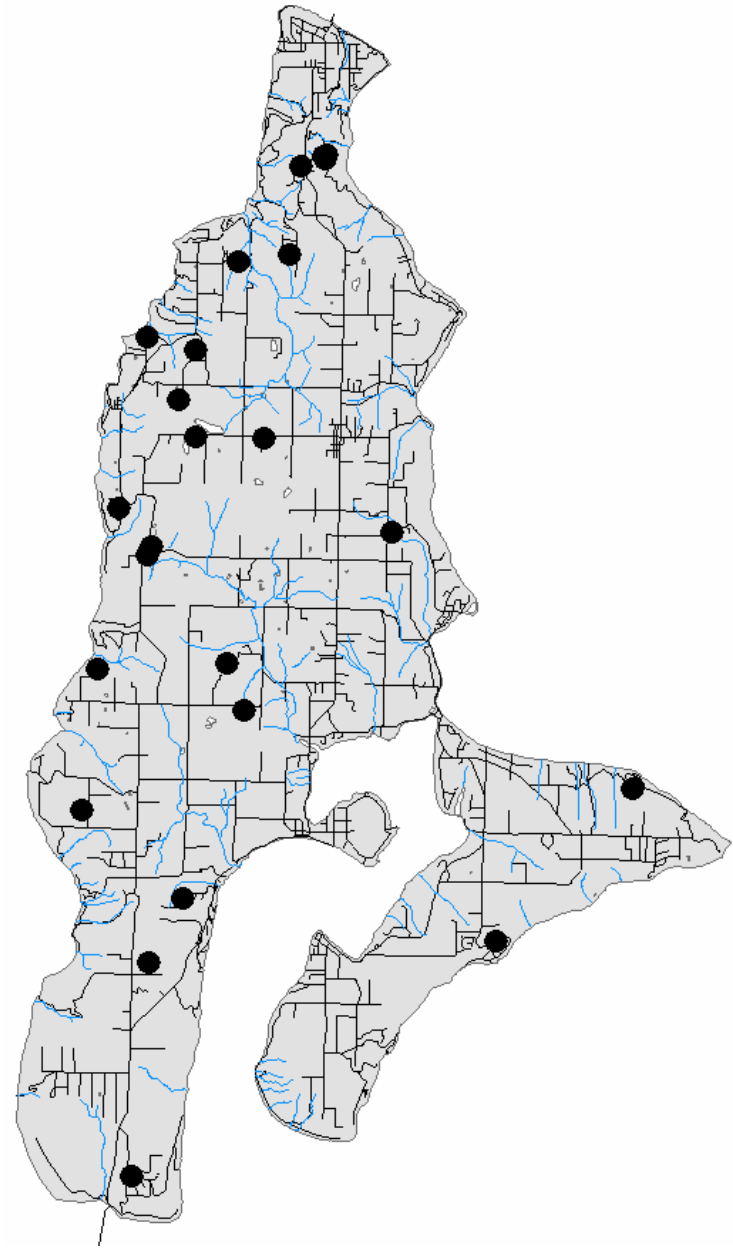
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Groundwater Level Survey Sites

Measurements done in Sept.
at 24 locations

Next measurements to be
done in Nov/Dec



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Modeling

- Phase I done
 - Steady-state groundwater model
 - Report available October 26
- Phase I modeling Peer Review
 - in review: soliciting USGS assistance
- Phase II surface water modeling
 - Scheduled over several years (2005-2007)
 - started with Judd Creek as template/pilot

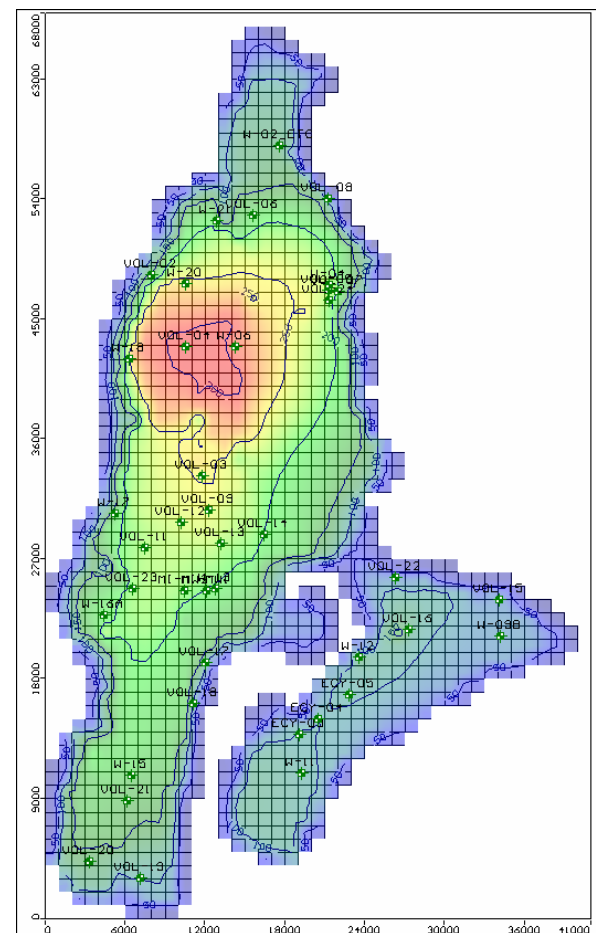
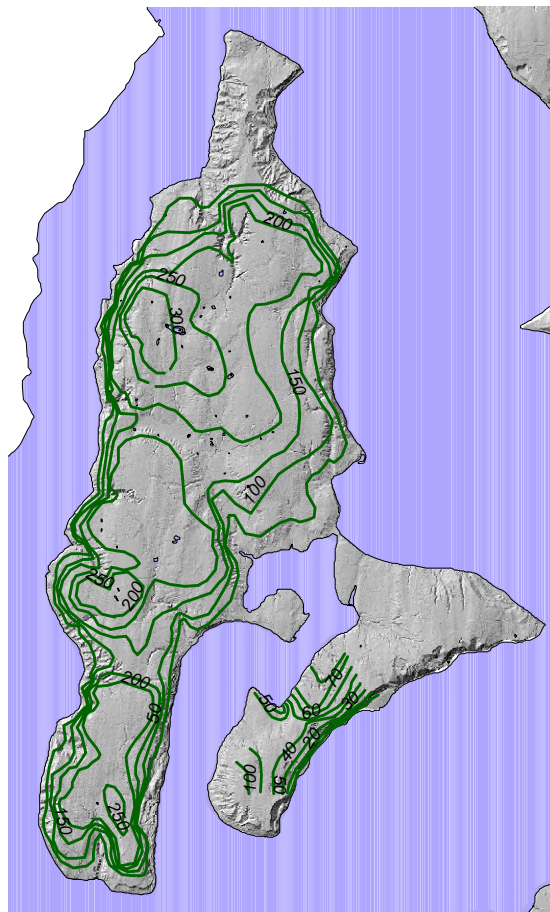
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Water Balance - comparison

	VMI WRE Phase I GW model (this report)		Carr Report (JR Carr/Assocs, 1983)		Groundwater Management Plan (VMI GWPC, 1998)	
<u>Inflows</u>	gpm	% of precip	gpm	% of precip	gpm	% of precip
Precipitation	49584	100%	48851	100%	56500	100%
ET	21410	43%	24425	50%	22370	40%
runoff	11719	24%	18319	37%	13170	23%
GW inflow	16455	33%	6107	13%	20960	37%
<u>Outflows</u>						
Puget Sound	13501	27%	1224	3%	8110	14%
Streams	1841	4%	4882	10%	12850	23%
Wells	753	2%				
Springs	360	1%				

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Water Level Contours



left shows previous data, right shows model output

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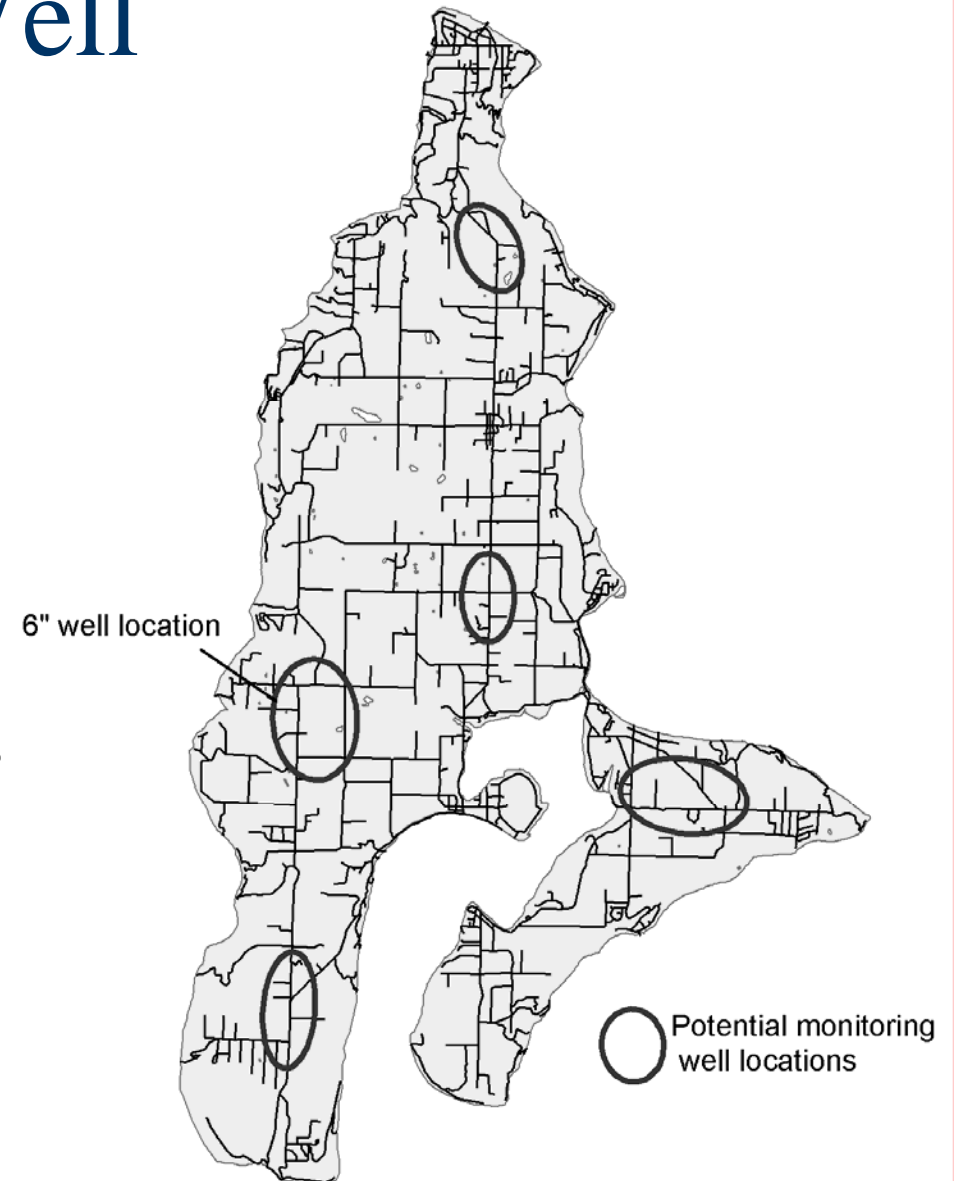
Monitoring Well Installation

- Started drilling (17Oct05)
 - Estimated to be ~ 1 week per well
- 6 wells planned
- To fill geological data gaps
- To measure hydrogeological properties
- Working with King County DOT

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Monitoring Well Sites

- 5 areas
- 6 wells
 - 5 - 2" wells
 - 1 - 6" well
- Estimated depths between 250' to 350' each.



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Groundwater Web Page

- Adding new search features
 - Date
 - Single parameter
 - Detect/non-detect
 - Concentration
- Able to download data
- Search via i-Map
- Check out:
<http://dnr.metrokc.gov/wlr/wq/groundwater.htm>

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King County Groundwater



King County seeks to protect the health and well-being of its residents who rely on groundwater for drinking, and to ensure enough groundwater replenishes streams, lakes and wetlands to support fish and wildlife in the future. This site is provided by the *King County Groundwater Protection Program*. For information about program goals, responsibilities, funding and staff, please read [About King County Groundwater Protection Program](#).

Groundwater data

Look up well depths, pollution measurements, flow directions and other groundwater data by looking up place names or attributes, or by navigating an interactive map.

Groundwater Maps and Reports

Read original reports and maps describing groundwater characteristics and conditions in King County.

Groundwater Management Areas

Learn about groundwater related issues, policies and activities in one of five areas in King County including East King County, Issaquah Valley, Redmond-Bear Creek, South King County, and Vashon-Maury Island groundwater management areas.

Groundwater Committees

Find out more about the citizen committees that advise King County on policies and plans related to groundwater.

Drinking Water - Public Health, Seattle and King County

Find King County Public Health services, resources and regulations related to wells and other small drinking water systems that rely on groundwater.

Related Groundwater Resources

Browse a list of links to valuable information sources related to groundwater in our region.

Why is groundwater important?

An estimated **30 percent** of King County's population relies on groundwater wells for drinking water. That's over **half a million people!**

Groundwater also feeds surface streams in the summer months, and provides water for salmon and other fish when there is little rain.

Care to join us?

Groundwater Protection Committee meetings are open to the public:

[East King County](#)
[Issaquah Creek Valley](#)
[Redmond-Bear Creek](#)
[Vashon-Maury Island](#)

[Learn more](#)

Interactive web page/database

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King County, Washington

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Groundwater

Data
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[Committees](#)

[Other Organizations and Resources](#)

The King County Groundwater Protection Program maintains geographic and tabular databases of groundwater quality and water level data. King County provides two methods to find and display information in its databases:



The **iMap Search** option opens an interactive groundwater map (iMap) which enables visitors to select and query groundwater information through web-based maps and geographically-based software.

[About iMap](#)



The **Text Search** option provides a search form enabling visitors to look up groundwater information filtered by geographic label such as city, watershed, Groundwater Management Area, or by attribute such as well log availability.

This page is produced by the **King County Groundwater Protection Program**. To learn more about this group and its responsibilities, please read [about the Groundwater Protection Program](#).